

What is Claimed Is:

1. A pharmaceutical composition for oral delivery administration comprising a pharmaceutically efficacious chiral compound, or a pharmaceutically acceptable salt thereof, wherein the pharmaceutically efficacious chiral compound, or a pharmaceutically acceptable salt thereof, comprises the (+) chiral compound enantiomer, or a pharmaceutically acceptable salt thereof, and the (-) chiral compound enantiomer, or a pharmaceutically acceptable salt thereof, each chiral compound enantiomer formulated separately, either as an immediate release (IR) formulation or as a controlled release (CR) formulation, and wherein when measured by the USP type II dissolution method, the *in vitro* dissolution rates for the CR formulation and the IR formulation are:

| <u>Time (hours)</u> | <u>% CR Release</u> | <u>% IR Release</u> |
|---------------------|---------------------|---------------------|
| 0 | 0% | 0% |
| 0.3 | 0-60 % | 20-100 % |
| 0.5 | 0-65 % | 20-100 % |
| 1.0 | 5-70 % | 25-100 % |
| 2.0 | 5-75 % | 25-100 % |
| 4.0 | 10-80 % | 30-100 % |
| 6.0 | 10-100 % | 30-100 % |
| 8.0 | 20-100 % | 40-100 % |
| 10.0 | 25-100 % | 45-100 % |
| 12.0 | 25-100 % | 45-100 % |
| 18.0 | 35-100 % | 50-100 % |
| 24.0 | 35-100 % | 50-100 %. |

2. The pharmaceutical composition of claim 1, wherein the composition is a bi-layered tablet.

3. The pharmaceutical composition of claim 1, wherein the composition is formulated to provide appropriate administration to a patient without the undesirable known side effects attributed to one or the other enantiomer.
4. The composition of claim 1, wherein the CR formulation further comprises TIMERxTM-N and one chiral compound enantiomer such that a gum to drug ratio of between about 1:3 to 3:1, respectively, is established.
5. The composition of claim 1, wherein the CR formulation further comprises TIMERxTM-O and one chiral compound enantiomer such that a gum to drug ratio of between about 1:3 to 3:1, respectively, is established.
6. The composition of claim 1, wherein the (+) chiral compound enantiomer and the (-) chiral compound enantiomer are present in the composition at different mass quantities.

7. The composition of claim 1, wherein the (+) chiral compound enantiomer and the (-) chiral compound enantiomer are present in the composition at a percent ratio selected from the following table:

| (+) Enantiomer | (-) Enantiomer |
|----------------|----------------|
| 2 | 1 |
| 3 | 1 |
| 4 | 1 |
| 5 | 1 |
| 10 | 1 |
| 1 | 2 |
| 1 | 3 |
| 1 | 4 |
| 1 | 5 |
| 1 | 10 |

8. The composition of claim 1, wherein about 90% of the (+) chiral compound enantiomer and about 90% of the (-) chiral compound enantiomer are released within about 12 hours of administration.

9. a pharmaceutical composition for oral delivery administration comprising a pharmaceutically efficacious chiral compound, or a pharmaceutically acceptable salt thereof, wherein the pharmaceutically efficacious chiral compound, or a pharmaceutically acceptable salt thereof, comprises the (+) chiral compound enantiomer, or a pharmaceutically acceptable salt thereof, and the (-) chiral compound enantiomer, or a pharmaceutically acceptable salt thereof, each chiral compound enantiomer formulated separately, either as an immediate release (IR) formulation or as a controlled release (CR) formulation, and wherein when administered to a patient, the pharmaceutical composition

provides the following percent of maximum (+) and (-) chiral compound enantiomer plasma concentrations:

| Time (hours) | (+) Enantiomer | (-) Enantiomer |
|--------------|----------------|----------------|
| 0 | 0% | 0% |
| 0.3 | 0-60 % | 0-100 % |
| 0.5 | 0-65 % | 0-100 % |
| 1.0 | 5-70 % | 25-100 % |
| 2.0 | 5-75 % | 25-100 % |
| 4.0 | 10-80 % | 30-100 % |
| 6.0 | 20-100 % | 30-100 % |
| 8.0 | 20-100 % | 20-100 % |
| 10.0 | 20-100 % | 20-100 % |
| 12.0 | 10-100 % | 0-90 % |
| 18.0 | 0-80 % | 0-80 % |
| 24.0 | 0-80 % | 0-80 %. |

10. A pharmaceutical composition for oral delivery administration comprising a pharmaceutically efficacious chiral compound, or a pharmaceutically acceptable salt thereof, wherein the pharmaceutically efficacious chiral compound, or a pharmaceutically acceptable salt thereof, comprises the (+) chiral compound enantiomer, or a pharmaceutically acceptable salt thereof, and the (-) chiral compound enantiomer, or a pharmaceutically acceptable salt thereof, each chiral compound enantiomer formulated separately, either as an immediate release (IR) formulation or as a controlled release (CR) formulation, wherein when administered to a patient, the pharmaceutical composition provides the following percent of maximum (+) and (-) chiral drug enantiomer plasma concentrations:

| Time (hours) | (+) Enantiomer | (-) Enantiomer |
|--------------|----------------|----------------|
| 0 | 0% | 0% |
| 0.3 | 0-40 % | 0-100 % |
| 0.5 | 0-45 % | 0-100 % |
| 1.0 | 5-50 % | 25-100 % |
| 2.0 | 5-55 % | 25-100 % |
| 4.0 | 10-80 % | 30-100 % |
| 6.0 | 20-100 % | 30-100 % |
| 8.0 | 20-100 % | 20-100 % |
| 10.0 | 10-100 % | 20-100 % |
| 12.0 | 0-80 % | 10-90 % |
| 18.0 | 0-80 % | 0-80 % |
| 24.0 | 0-80 % | 0-80 %. |

11. A pharmaceutical composition comprising tramadol, or a pharmaceutically acceptable salt thereof, wherein the tramadol, or a pharmaceutically acceptable salt thereof, is a combination of the two (+) and (-) tramadol enantiomers comprising (+) tramadol enantiomer, or a pharmaceutically acceptable salt thereof, in a controlled release (CR) formulation and the (-) tramadol enantiomer, or a pharmaceutically acceptable salt thereof, in an immediate release (IR) formulation for oral delivery administration, and wherein when measured by the USP type II dissolution method, the *in vitro* dissolution rates for the CR formulation and the IR formulation are:

| Time (hours) | % (+) Tramadol Enantiomer Release | % (-)Tramadol Enantiomer Release |
|--------------|--------------------------------------|-------------------------------------|
| 0 | 0% | 0% |
| 0.3 | 0-60 % | 20-100 % |
| 0.5 | 0-65 % | 20-100 % |
| 1.0 | 5-70 % | 25-100 % |
| 2.0 | 5-75 % | 25-100 % |
| 4.0 | 10-80 % | 30-100 % |
| 6.0 | 10-100 % | 30-100 % |
| 8.0 | 20-100 % | 40-100 % |
| 10.0 | 25-100 % | 45-100 % |
| 12.0 | 25-100 % | 45-100 % |
| 18.0 | 35-100 % | 50-100 % |
| 24.0 | 35-100 % | 50-100 %. |

12. The pharmaceutical composition of claim 11, wherein the composition is a bi-layered tablet for oral delivery.

13. The pharmaceutical composition of claim 11, wherein the composition is formulated to provide appropriate administration to a patient for the treatment of pain without the undesirable known side effects.

14. The composition of claim 11, wherein the CR formulation further comprises TIMERx™-N and one chiral compound enantiomer such that a gum to drug ratio of between about 1:3 to 3:1, respectively, is established.

15. The composition of claim 11, wherein the CR formulation further comprises TIMERx™-O and one chiral compound enantiomer such that a gum to drug ratio of between about 1:3 to 3:1, respectively, is established.

16. The composition of claim 11, wherein about 90% of the (+) tramadol enantiomer and about 90% of the (-) tramadol enantiomer are released within about 12 hours of administration.

17. The composition of claim 11, wherein the (+) tramadol enantiomer and the (-) tramadol enantiomer are present in the composition at a percent ratio of 3:1, respectively.

18. The composition of claim 11, wherein the (+) tramadol enantiomer and the (-) tramadol enantiomer are present in the composition at a percent ratio of 2:1, respectively.

19. A pharmaceutical composition for oral delivery administration comprising tramadol, or a pharmaceutically acceptable salt thereof, wherein the tramadol, or a pharmaceutically acceptable salt thereof, is a combination of the two (+) and (-) tramadol enantiomers comprising (+) tramadol enantiomer, or a pharmaceutically acceptable salt thereof, in a controlled release (CR) formulation and the (-) tramadol enantiomer, or a pharmaceutically acceptable salt thereof, in an immediate release (IR) formulation for oral delivery administration, and wherein when administered to a patient, the pharmaceutical composition provides the following percent of maximum plasma concentrations for the (+) and (-) tramadol enantiomers:

| Time (hours) | (+) Enantiomer | (-) Enantiomer |
|--------------|----------------|----------------|
| 0 | 0% | 0% |
| 0.3 | 0-60 % | 0-100 % |
| 0.5 | 0-65 % | 0-100 % |
| 1.0 | 5-70 % | 25-100 % |
| 2.0 | 5-75 % | 25-100 % |
| 4.0 | 10-80 % | 30-100 % |
| 6.0 | 20-100 % | 30-100 % |
| 8.0 | 20-100 % | 20-100 % |
| 10.0 | 20-100 % | 20-100 % |
| 12.0 | 10-100 % | 0-90 % |
| 18.0 | 0-80 % | 0-80 % |
| 24.0 | 0-80 % | 0-80 %. |

20. A pharmaceutical composition for oral delivery administration comprising tramadol, or a pharmaceutically acceptable salt thereof, wherein the tramadol, or a pharmaceutically acceptable salt thereof, is a combination of the two (+) and (-) tramadol enantiomers comprising (+) tramadol enantiomer, or a pharmaceutically acceptable salt thereof, in a controlled release (CR) formulation and the (-) tramadol enantiomer, or a pharmaceutically acceptable salt thereof, in an immediate release (IR) formulation for oral delivery administration, and wherein administered to a patient, the pharmaceutical composition provides the following percent of maximum plasma concentrations for the (+) and (-) tramadol enantiomers:

| Time (hours) | (+) Enantiomer | (-) Enantiomer |
|--------------|----------------|----------------|
| 0 | 0% | 0% |
| 0.3 | 0-40 % | 0-100 % |
| 0.5 | 0-45 % | 0-100 % |
| 1.0 | 5-50 % | 25-100 % |
| 2.0 | 5-55 % | 25-100 % |
| 4.0 | 10-80 % | 30-100 % |
| 6.0 | 20-100 % | 30-100 % |
| 8.0 | 20-100 % | 20-100 % |
| 10.0 | 10-100 % | 20-100 % |
| 12.0 | 0-80 % | 10-90 % |
| 18.0 | 0-80 % | 0-80 % |
| 24.0 | 0-80 % | 0-80 %. |

21. The composition of claim 12, wherein the bi-layer tablet consists of the following:

(a) a controlled release formulation consisting of about:

| Ingredients | A | (%) |
|--|----------|------|
| 1. (+) Tramadol HCl | 50 mg | 5.4 |
| 2. TIMER _x TM -N | 350 mg | 37.7 |
| 3. Proslov | 150 mg | 16.2 |
| 4. Magnesium Stearate | 5.5 mg | 0.6 |
| Total | 555.5 mg | 59.9 |

and

(b) an immediate release formulation consisting of about:

| Ingredients | A | (%) |
|-----------------------|--------|------|
| 1. (-) Tramadol HCl | 150 mg | 16.2 |
| 2. Prosolv | 100 mg | 10.8 |
| 3. Lactose Fast-Flow | 100 mg | 10.8 |
| 4. Explotab | 20 mg | 2.2 |
| 5. Magnesium Stearate | 3 mg | 0.3 |
| Total | 373 mg | 40.3 |

22. The pharmaceutical composition of claim 1 or claim 9 or claim 10 or claim 11 or claim 19 or claim 20, wherein the weight/weight percentage of TIMERx™-N in the formulation is 38%.

23. The pharmaceutical composition of claim 1 or claim 9 or claim 10 or claim 11 or claim 19 or claim 20, wherein the weight/weight percentage of TIMERx™-O in the formulation is 38%.